-1-

## SEQUENCE LISTING

	<110>	OWEN	S, Gary	-					
		MACK	, Christoph	er					
5		BLAN	K, Randall						
	<120>		positions an th Muscle Co		for Modulat	ing Express	ion within		
10	<130>	001	48-03					•	
	<140>	US (	09/807,757	52					
	<141>	1999	9-10-22						
15	<150> US 60/105,330								
	<151>	1998	8-10-23						
	<160>	18							
20	<170>	Pate	entIn versio	on 3.0					
	.210	-							
25	<210>		•						
23	<211> 5342 <212> DNA								
	<213>	Rati	tus norvegio	cus					
30	<400>	1							
		_	tcaagggaaa	gatcctgtct	aaaagatcct	atggagacaa	tcgagggaca	60	
	taaaca	actat	caccccctgg	ctttcgcaga	cctatatatg	cacaagcatg	tgcccttgta	120	
35	catota	aato	tgcacacaca	gaggcatgca	cacctgacat	cataccaaaq	caaagatgaa	180	
	outget	uuuug	cycacacaca	gaggeaegea	caccigacat	cacaccaaag	caaayacyaa	180	
	atgaag	gtaga	aatgtcaact	ctacatattt	tggtggttaa	tagttgcatg	tgtccagtgg	240	
40	ctacto	gcatc	aggagttgct	gattctgggc	attcctgtca	ctaccagagc	taactcacca	300	
70	atacca	atgct	aagtcatctc	tggaccagag	cccagtgagg	actaaaatgg	tctccagttc	360	
	tcaagg	ggctg	aactataaac	catcactaaa	tcacattgcg	gagacattct	gtgatgtctg	420	
45	tggago	caata	cagctggaga	tgactcttca	gtgtgtgctt	atagcttgga	tttattttct	480	

agtttccctg aactgcaacc aagtgaccag atgtacgctc cccaatcagt ccatagctcc ttgcatccat ggctgccaac cctggcagtt atctaagcgc tcagtggagc tctgtaaact tgtacgcact catccagtgg gcctttctct cccagaagag actggagctg gatataaaat ctcaaactct ggctggagag atggctcagt gtttaagagc actgactgct cttccagagt 720 tcaaatccca gcaaccacat ggtggcttac agccatctgt aatgatattt gataccctct 780 10 tctggtgtat ctgaagacag ttacactgtg ctcataataa ataaataaat ataagtaaat aaataaataa atatttttaa aaaccctcaa actcacacat tgtgaccatt aattacttgc 900 15 tcaaaaattg agcaaatcct ccttggttac ttcagattgc tttttgaaat tcttaaaata 960 aataaaacaa ctgaaactta ctttcttctt cttgtcataa tattctgatt attgacaaat 1020 acaaccagta taaacaaaaa agttataaga ttatcaaagc tcttttcttg gtttttaaag 1080 20 gaattagcat cttgaaatga ccaagacaac actccaacac tcatgaaaca aaacatcagc 1140 25 ccggttgcat taatcataaa tgtcccatcc tgcctcacaa aatgcagtct ctgtatttga 1320 gtgatcagac aatgtatttc tagttggtga aaccagatac agagtagaaa actcttaagc 1380 30 aacacaaaga agccccatta ttatttagca accattacac tcttctaaga gtcaacggtg 1440 taattotoaa agacagotat gogtgootgg gtgoaggtgg acaccattaa toaagagoat 1500 35 gagacatggt agcgtgagta gacagctgct ggcattcacc ctgggctttc cctgacatgc 1560 caacagttca gagccactta tggatccgtc taaaatatct ccatcatgaa ttgaatcaga 1620 accttggctt gcaggaggga agtagagaaa ggtaaagtcg ttgactgtcc attgaagcca 1680 40 aagagctgat gatgtetttg aagaatggea gggteaettg ategetettt etgteeagtg 1740 ggctcataaa cacggaggag gatgagcagg cttcatttca acatttcaaa cttcttttac 1800 45 aattttttt atgacggggc aatgggtcct ctctgtggcc aaaagacggt ccttaagcat 1860

.

-

gatatcaggg gtcagcgata aaccaacaac atgcacgtgg actgtaccta ggggttaacg 1920 cagttacagt gattctgact tctaagttcc tcttagggta acataggctg gtgaatcctg 1980 5 attacatact tccatatgta atacatacag acttcattga tactacacac agactccaga 2040 ctacatacaa tgtggcttcc ataaaatgat cactcctctg cagattcgca ggtgacccaa 2100 gcatcttttg ttataggcta ccttttgcaa cagtgttgcc ttaaagtccc agctagtcag 2160 10 agacaggccc ttcctcatct caagccctta gctaatggac ccaaaggcta gcctgacagg 2220 aagagetgge atettetgag gaatgtgeaa accatgeetg egtetgette atgacaetag 2280 15 cccagtgtct gggcatttga gcagttgttc tgagggctca ggatgtttat ccccataagc 2340 agctgaactg cetectgttt egagageaga geagaggaat geagtggaag agaceeagge 2400 ctctggccac ccagattaga gagttttgtg ctgaggtccc tatatggttg tgttagagtg 2460 20 aacggccagc ttcagcctgt ctttgctcct tgtttgggaa gcgagtggga ggggatcaga 2520 ccagggggct atataaccct tcagcattca gcctccccag acaccaccca cccagagtcg 2580 25 agaagcccag ccagtcgcca tcagggtaag gatgtgactt agagttttcc caggcttttt 2640 aatcatccag tggaaccaga cgttgtctgt agtaatctga atgactcaca tgtttggaat 2700 ttgggaataa agatttatgc tgttaaaatg attgtagctc cttagcttgc atgatttcgt 2760 30 atctaaacgg gactaaaaat gaatcgtggt ttactggcaa aggagatgga gaggaaatta 2820 aagtttgttc atgcgtggca tctgtgaaat ctgtttacac taaaccaact gctcggatcc 2880 35 cgcagcctac tataggggag aagtccagcc atctatggta aattatacat ttgtttctac 2940 ttaggtgttg gacacttgtg gatttgtcta tggttcagac ttagtgtgag gactttccat 3000 ctgaccgact acagccgggt taactggaac tggatgtcag gagtgaactg gcgcggttgc 3060 40 ctgcgctctg gttttggctg agtggactgc gttgcctctg ggtttccggg gctctaacag 3120 tagacatgta tatcttgtgc ccttacgatt caaacctatg tcattggtca tttgcagcaa 3180 45 agcatagete etetaetete tgeaaagaaa tgaggaagtg teteattegg gaaggatetg 3240

attgcgtttc tctgcctcaa gtgtccctct ggccccttag gcagaatctc tgtgggagcc 3300 accccactca ggacttggta acttctgcag ggaaacggag ttttctcgat aagattttcc 3360 5 tccccttttg tgattcatga ctaaatatgg tttgcgtttt gagactcaca aactggggaa 3420 ggttactgtc ctttcctcct ccctcccctc ccctcttaca attcatttt ggcacaagat 3480 gageteeact gtgetgeace aaacteeeeg geetegggtg cagtteeaaa ageggaeget 3540 10 ggagcccagt gtgttttacc taattaggaa atgctccctg cttcaaactg aagctgctcc 3600 ttcaggttag ataagagttg caaaccacag cggcagtttc ctctggaaac acaccgacgt 3660 15 cttctctagt gacgacgctc ctttcaaagc ttattaagac atattttctg gatattttgg 3720 atgaagtaga aatacgtctt tactgaatta gtgattttta cttgcatttt aaaaaaaaa 3780 taggaagett atttetetga atataetaag geacaacett aagteateet geecaacagt 3840 20 ttatgtgggt tatccttccc cgttttcaaa gggcatccta attccgagtg gtttatctca 3900 tttgcagccc ggatgctatg ttttggacag caggcttcct gtagactctc tgctggtcct 3960 25 ttgctgctgg ctgcctctgc caatcacctg gctgctgtgc ctctctgtgc tttgagactg 4020 tcttctgagt ctttatcgtc cactggaaag gaagctaaat ataaattcag tgtctgaaag 4080 aagaggcaga gtagagagag gaaagagcaa accaaccaag atcccatttt tccgttcttg 4140 30 tgaggggaac ccaggcattg aagatttcac tctgattttg gaggcagggt ttgaaaggaa 4200 accaaaatca caaacagaat ctctgggtaa agacaatagt cacatggtga gatcgacaag 4260 35 caatgettgt acaatgeest tgatgteese cgaagetgte gaaaacacaa gettaaatgt 4320 caattactta aaatgctatt ttaagcccaa aagagtatgt gctcagttag tcaaggttag 4380 aagaaatacc agaactcagg ggaggaaaaa atatttataa aacctgatac ttgccacttc 4440 40 caaagaaccc cagtaaatat tttggagaga ataagtaagc tttgggggtg agggagtggg 4500 gggcaattca ctttttatta cggtcatatt aagtttcttt ctgtaactta tcagtcttaa 4560 45 gtaagaatag ctattatcat cctgttgggt tttcagctta gcagtgattt tgattaatga 4620

The second second

ggaaatgttg taaatcctaa aattgcaaac tcccccatca aaaattttca atccaatatt 4680 ttttactaga gtaggacttg gtagcctttc aacttgtgat cctcctgcct cagcttccca 4740 5 agtggtagga tcacaggtct acatcaccac gcccagtctt gattcatgtc taatgccaca 4800 ccagcaccca agtcttcaga gacaaaagat ttttctttta aacatttaat atgagcaaac 4860 attttaacat teteatatge tgeceattat teeaaaatet acetttttgg gggaaaatat 4920 10 attttaccaa aaaaaaagt gactttggtt tgatatagat aacaaacctt ggtttgatat 4980 agataacaaa cctttctaga tagttcttta acatgtggta tcactattcc ctatagacct 5040 15 gtgttctcca ctcaggacct ctcatctgtg ctctgtggcc tgttcacaca ctaatgctct 5100 gccctgcttg agagtggtaa aagagcctgt gagctcctgc tctttgtgct gagggcttgt 5160 ggtgctaacc tggaagtcag ggtttcagct catcaaaggc cttacagtct ggtgaaagca 5220 20 tttcaagata aagagtgtta gttgagatct ggggagagcg tccagctaaa ataacacaac 5280 agggccaaga accetggttg tggttgggag tgaccgtagg ctccggccaa acgcaacete 5340 25 ga 5342

<210> 2

<211> 326

30 <212> DNA

<213> Rattus norvegicus

35 <400> 2
ggaaacggag ttttctcgat aagattttcc tccccttttg tgattcatga ctaaatatgg 60
tttgcgtttt gagactcaca aactggggaa ggttactgtc ctttcctcct ccctccctc 120
40 ccctcttaca attcattttt ggcacaagat gagctccact gtgctgcacc aaactccccg 180
gcctcgggtg cagttccaaa agcggacgct ggagcccagt gtgttttacc taattaggaa 240
atgctccctg cttcaaactg aagctgctcc ttcaggttag ataagagttg caaaccacag 300
45

cggcagtttc ctctggaaac acaccg

326

<210> 3 5 <211> 1047 <212> DNA <213> Homo sapiens

10

<400> 3 agagagcaag caagagcagg gaaaactgcc ttataaaacc atcagatatc gtgagaactc actcactttc atgagaacag catggtataa aacgccccca tcgatccagt cacctcccac 15 180 gacgtagaac caaaccatat cacctggtct ctctacttcc tgtcaaggag gttagtgggc 240 20 agagaggagg gctacagagg cttcctttga acaatctcct ttcttttcca aactacttct 300 ttgacaggct gctgggtaga ctctctggtc aaaggatggt ccctacttat gctgctaaat 360 tgctcggtga caaattagta gacaaagcta atgcaccaaa aaaatgaatg tagttatagt 420 25 aatgctaaca tccaaattcc tctttgtaag acataggcct gtcaaccttg tctccatact 480 tcaattccta tttccactca cctccctcaa gaacttgatt tataaacagt gtgcctacca 540 30 taaaatcatc actccctcta tgtatttata gacgactgaa ggaatatctt tcttctttgc 600 atgctaccgt ggtagaagga ttttaaaagt ccatgctagg cagaggcagc cctttctgcc cctttctgtt ctcagtttat taggaaatag cctgaaattc cagcatgata gcaactggca 720 35 tccgtctgtg aatgtgcaaa ccatgcctgc atctgcccat tacccgtagc tcagtgtctc 780 tgggcatttc tgcagttgtt ctgaaggctt ggcgtgttta tctcccacag gcggctgaac 40 cgctcccgtt tcatgagcag accagtggaa tgcagtggaa gagacccagg cctccggcac 900 cagattagag agttttgtgc tgaggtccct atatggttgt gttagactga acgacaggct caagtctgtc tttgctcctt gtttgggaag caagtgggag gagagcaggc caagggctat 1020

-7-

ataaccette agettteage tteeetg

1047

<210> 4 5 <211> 1056 <212> DNA

<213> Rattus norvegicus

10

<400> gacatggtag cgtgagtaga cagctgctgg cattcaccct gggctttccc tgacatgcca 60 acagttcaga gccacttatg gatccgtcta aaatatctcc atcatgaatt gaatcagaac 15 cttggcttgc aggagggaag tagagaaagg taaagtcgtt gactgtccat tgaagccaaa 180 gagetgatga tgtetttgaa gaatggeagg gteaettgat egetetttet gteeagtggg 240 20 ctcataaaca cggaggagga tgagcaggct tcatttcaac atttcaaact tcttttacaa 300 tttttttat gacgggcaa tgggtcctct ctgtggccaa aagacggtcc ttaagcatga 360 tatcaggggt cagcgataaa ccaacaacat gcacgtggac tgtacctagg ggttaacgca 420 25 gttacagtga ttctgacttc taagttcctc ttagggtaac ataggctggt gaatcctgat 480 tacatacttc catatgtaat acatacagac ttcattgata ctacacacag actccagact 540 30 acatacaatg tggcttccat aaaatgatca ctcctctgca gattcgcagg tgacccaagc 600 atcttttgtt ataggctacc ttttgcaaca gtgttgcctt aaagtcccag ctagtcagag acaggeeett eeteatetea ageeettage taatggaeee aaaggetage etgacaggaa 720 35 gagetggeat ettetgagga atgtgeaaac eatgeetgeg tetgetteat gaeactagee 780 cagtgtctgg gcatttgagc agttgttctg agggctcagg atgtttatcc ccataagcag 840 40 ctgaactgcc tcctgtttcg agagcagagc agaggaatgc agtggaagag acccaggcct 900 ctggccaccc agattagaga gttttgtgct gaggtcccta tatggttgtg ttagagtgaa cggccagctt cagcctgtct ttgctccttg tttgggaagc gagtgggagg ggatcagacc 1020

agggggctat ataaccette ageatteage etecce

1056

10

<400> 5 acaccataaa acaagtgcat gagccgtggg agcgtgagtc gacagctgct gccattcacc ctggggtttc cctaacatgt gcacagttca gaagcactcc cagaatccat ccaaaatatc 15 tctatcatga atggaatcag aaccttggct tgcaggagga aagtacagaa atgtaaagtc 180 actgactgtc catcaaagcc aacgatctga tgcctttgaa gaatgatagg gtcacttgag 240 20 gtcacttgat ctctgtttct gtccagtggg ctcatagtca tggaggagag tgagcaggct tcatttcaac atttcaaatt tcttttacaa agtttttttt ttttttatg acagggtgac 360 tggtgatctc tgtgggcaaa ggatggtcct taatcatgct gttaagggtc agtaaaaagc 420 25 cagcaacatg cggaatgtta agggttaaag cagttacagt gattctgact tctaagttac 480 tctttgggca acacaggctg gttaatcctc actacatact tcagttcctg gtttcattac 30 tacaacacaa agacacaatg tataagtaca atgtagcttc cataaaaaca tgactcctct 600 gcatatttat gggtgactcg aagcatcttt tgatctaggc taccttttgc aacagtgttg 660 cttaaaaatc gcagctagtc agagacaggc ccttccttat ccaagtcctc agctaatggc 720 35 ccaaaagact agcctgacag gggctggcat cttctgagga atgtgcaaac cgtgcctgcg tetgteceat gacactagee cagtgtetgg geatttaage agttgttetg agggettagg 840 40 atgtttatcc ccataacgag ctgagctgcc tcctgtttcg ggagcagaac agaggaatgc 900 agtggaagag acccagcctc tggccaccca gattagagag ttttgtgctg aggtccctat atggttgtgt tagagtgaac ggccagcttc agcccgtctt tgctccttgt ttgggaggcg 1020 45

agtgggaggg gatcagagca aggggctata taaccettca gcettcagee teec

1074

<210> 6 5 <211> 1013 <212> DNA

<213> Gallus gallus

10

<400> 6 gaattcatgg gctttttgaa tttgtagtgg tttgagatgg agtttggaga tgctaatttc tgatctctag tagtagttca agggcaatgt attgttactg tgaaagggct gctcatgaga 15 cacagtetge etagagaaca getggetgea gecaaataaa teeagteete tgaaaatage 180 tcatacattg agaacctttg ctttagttgc taaaaatatg ctcagggcaa agctagctag 240 20 aggttatgaa attcagcaac tttattatga atgttttgag ataggagttt acaacttgtg 300 tccatcagtg gaattgacac taggatgaag cttgtccaca gttcctagtg ctttggaaat 360 aaactgatgg agacaggata ttgattgtca cccattacag gctaggggca ccataacaac 420 25 ctgttagcag aacgtttaca cagccttcaa agaccctacc atgaacccta tgcaacagca 480 ggtacttctt ttagtatccc caagtgcaga ccttttaagt gaatttgtgg caaaattcag 540 30 tagctgttta gcttgccgaa agtattctca ttgctttggt ccaaatcttt aacaaatgca 600 aagtgtctcc ttaaaaacac tttccctatt acaaatgact gctctttcag ttttcactct 660 gcctcttgga tgttcctgtg aaggccaggg cctctctctc ttgtttgaac gtgtgctctt 720 35 cctgacagag ggtgtctgtc ccaggcacgc ttttcttgct gcattttagc aagttctgca 780 gtgtttatct tacacagctg aaagtctcct cctgtttcat gagctctgcg ttggaatgca 840 40 gtggaaggga ctgagggcct gtcgacccag attagaggtt tttgtaataa ggtccctata 900 tggttttgtt agagacttcg gctctgtctc tctcatctct gctccttgtt tgggaggctg 960 gtgggaggag aagagctgaa ggggctatat aaccctggtg cttttggata cac 1013

<210> 7
<211> 2678
<212> DNA
<213> Homo sapiens

5

<400> 7 gtaagtgcgc caggccaagg atgtgactta tagattccag tggctctttt aattacccgg 10 tataataaga caccatctgc agggatttgg ctgggttcat gcactgatat ttctgaatga agattgtact actaaaatga ttgtagcttt tggctttaat gatctaacgt taaagacagg 180 15 gctaatatgt agtttggtat gatggaaggg gtagagaaga atatgaaaat tttattaatg 240 catgtcttct gtaaaatgtt catcctaaac aaacagccca gatcttgcag cacaatacag gtatgcaggt tagctgtgtg cagtaagtta tacatttatt tgtatttagg cactggaaac 360 20 tcagatttct ttctggttct gatttgttgt aggggttttc tttcactggg ctgtattttt 420 ggtgcagctt aggtgtctgg aagtcggatt ttggaagtga acagaagaat agttgcctag 25 tetttgattg tgcctgaatt tgtgtattcc cttctggttt ccctgctcta actggtagtg 540 tettttgttg gaaatgtata tetettttt gttggaaatg tgtatgtgtg acettacaag 600 tttggatcta catcattggt catttgcagc agagcgcagc aggtgacctg ctgaattttt 660 30 ctctggaaag aaagatttag ggagcagagc ctgcatctga cagctgtgtg tcctcccggc 720 eggatatetg gttgeatete ceteagetta aageteeett eageetggtg aggeaagtgt 780 35 gactgtgcag ccagccctgc caacccaggc tgagtttcac tgcaaatcaa ggtttggcag 840 cttcagccca gactggagtt ttcatgctga gattttccta gcattttgtg tttcatggac 900 taaatatggt ttgtgtttca agaccaatga gctgggaact gtactgttct ttcccctccc 40 atcaactcat ttttggcaca agacgcactc tagtcagttg gagcaaaccc ctagaggagc 1020 tgtaaaccac tgagctcgac tctttccggg gacacagtga cttcttcaat gacagtgctc 1080 45 cttttggaca ttataacatt cttcctagat tttcttttc tttttctttt ttttttggcc 1140

agtaaaaaac atttttctgc attcttgctg atgctgaggg ccagtctcct ttttctgagt 1200 atagtcaacc cctcctccca agccatcact gcccaacaaa acagttatta aaaatatccc 1260 5 acattcatgg taaccatacc ttcccatttt cagagaccat cctaatttga aatgttttat 1320 cctcttttca gcccttactt ttggtttgga aaatgcactt agcacatcca tagagtgcct 1380 gcttatcccc tggggctggc tgcttctgac agatacccca ggctcttagg cttcttccct 1440 10 tttttctcct ttatagttct cgcctctttt ctaaagcttc ttaatctgct ctgagggaag 1500 ccaaatcaca ggaatgccaa aataattcag catctggaaa gggaaaagaa gggtgggaaa 1560 15 ggaaagggca agccattcat gagtcccatg tccattcttg caagtggaat ccacacgttg 1620 attattttta ttctaagcct ggagcagtgt ggaaagaaag caaaggttag aaacaaagag 1680 ttctggatac tgaaaataat cacacagtga tagtaataat aatgatgatg aaattagtat 1740 20 ttattgagaa cttagagtat ctctgccact ataaattatt ttaaacactt taaaaaaccc 1800 aatctctata agaactccat gaggtatgtc ctgatatcat tactgtttta tagtaaggaa 1860 25 attgtggttt agagatgtta aataactgaa atcacacagc ttttaactgt tggagcctgg 1920 actcaaatcc aggctttctg acttcagagt ctaagctcat aatcatgtga tctgaaatct 1980 tcgttgtcct aaatgtatca gttcaaggct cttggacaag tcacttcaac tccttaagcc 2040 30 ttggtttcct tgtcagctga agataatatt acatgccttg actttaaaat atgtcatctc 2100 aattgcagtt ttatgttctt tgcaaagagt tattttacat gaagcactgc taaggaagtt 2160 35 ttaggccttt ggcaagatgc aggtttgatt ttgtgggaat gttttggcag aactccaact 2220 ctgtaatagc tattttattt ccctacttct cagatgtttc cttaaaagaa ctgccttttt 2280 tatatggatt tggaggtgca atcagttaac ccatttagaa gaagaaattt tctcaatttg 2340 40 aaatcctaat tgagatctca atgccaggca gataactctg ggtgtccttc tcttaacgga 2400 acatttcgac ctaattgtga ttagaaaagt ggaagaggtc ttgaactgga agccaagggg 2460 45 tggctaaaga gtacctgatg tctggctgga gctctcctct aatgccctgt gtgcccttga 2520

.

Salar Salar

gcaatcactt cctgattttc ttatttgtga aaatgagagc attggatgaa aatgtcctct 2580
aatatgcctt caatttctca aatttgtaag ttgataggct gctccagcct ttctaatttt 2640
atgaaaggat ccaagtataa gatccaagta taaaatgg 2678

<210> 8

<211> 2678

10 <212> DNA

<213> Rattus norvegicus

15 <400> 8 gtaaggatgt gacttagagt tttcccaggc tttttaatca tccagtggaa ccagacgttg 60 tctgtagtaa tctgaatgac tcacatgttt ggaatttggg aataaagatt tatgctgtta 20 aaatgattgt agctccttag cttgcatgat ttcgtatcta aacgggacta aaaatgaatc gtggtttact ggcaaaggag atggagagga aattaaagtt tgttcatgcg tggcatctgt gaaatctgtt tacactaaac caactgctcg gatcccgcag cctactatag gggagaagtc 300 25 cagccatcta tggtaaatta tacatttgtt tctacttagg tgttggacac ttgtggattt 360 gtctatggtt cagacttagt gtgaggactt tccatctgac cgactacagc cgggttaact 30 ggaactggat gtcaggagtg aactggcgcg gttgcctgcg ctctggtttt ggctgagtgg 480 actgcgttgc ctctgggttt ccggggctct aacagtagac atgtatatct tgtgccctta cgattcaaac ctatgtcatt ggtcatttgc agcaaagcat agctcctcta ctctctgcaa 600 35 agaaatgagg aagtgtctca ttcgggaagg atctgattgc gtttctctgc ctcaagtgtc 660 cctctggccc cttaggcaga atctctgtgg gagccacccc actcaggact tggtaacttc 40 tgcagggaaa cggagttttc tcgataagat tttcctcccc ttttgtgatt catgactaaa 780 tatggtttgc gttttgagac tcacaaactg gggaaggtta ctgtcctttc ctcctccctc 840 ccctccctc ttacaattca tttttggcac aagatgagct ccactgtgct gcaccaaact 900 45

ccccggcctc gggtgcagtt ccaaaagcgg acgctggagc ccagtgtgtt ttacctaatt 960 aggaaatgct ccctgcttca aactgaagct gctccttcag gttagataag agttgcaaac 1020 5 cacagoggca gtttcctctg gaaacacaco gaogtottot ctagtgaoga cgctcctttc 1080 aaagcttatt aagacatatt ttctggatat tttggatgaa gtagaaatac gtctttactg 1140 aattagtgat ttttacttgc attttaaaaa aaaactagga agcttatttc tctgaatata 1200 10 ctaaggcaca accttaagtc atcctgccca acagtttatg tgggttatcc ttccccgttt 1260 tcaaagggca tcctaattcc gagtggttta tctcatttgc agcccggatg ctatgttttg 1320 15 gacagcagge tteetgtaga etetetgetg gteetttget getggetgee tetgecaate 1380 acctggctgc tgtgcctctc tgtgctttga gactgtcttc tgagtcttta tcgtccactg 1440 gaaaggaagc taaatataaa ttcagtgtct gaaagaagag gcagagtaga gagaggaaag 1500 20 agcaaaccaa ccaagatccc atttttccgt tcttgtgagg ggaacccagg cattgaagat 1560 ttcactctga ttttggaggc agggtttgaa aggaaaccaa aatcacaaac agaatctctg 1620 25 ggtaaagaca atagtcacat ggtgagatcg acaagcaatg cttgtacaat gcccttgatg 1680 tcccccgaag ctgtcgaaaa cacaagctta aatgtcaatt acttaaaatg ctattttaag 1740 cccaaaagag tatgtgctca gttagtcaag gttagaagaa ataccagaac tcaggggagg 1800 30 aaaaaatatt ttaaaacctg atacttgcca cttccaaaga accccagtaa atattttgga 1860 gagaataagt aagctttggg ggtgagggag tggggggcaa ttcacttttt attacggtca 1920 35 tattaagttt ctttctgtaa cttatcagtc ttaagtaaga atagctatta tcatcctgtt 1980 gggttttcac aaactccccc atcaaaaatt ttcaatccaa tattttttac tagagtagga 2040 cttggtagcc tttcaacttg tgatcctcct gcctcagctt cccaagtggt aggatcacag 2100 40 gtctacatca ccacgcccag tcttgattca tgtctaatgc cacaccagca cccaagtctt 2160 cagagacaaa agatttttct tttaaacatt taatatgagc aaacatttta acattctcat 2220 45 atgctgccca ttattccaaa atctaccttt ttgggggaaa atatattta ccaaaaaaaa 2280 tagatagttc tttaacatgt ggtatcacta ttccctatag acctgtgttc tccactcagg 2400

5 acctctcatc tgtgctctgt ggcctgttca cacactaatg ctctgccctg cttgagagtg 2460
gtaaaagagc ctgtgagctc ctgctctttg tgctgagggc ttgtggtgct aacctggaag 2520

tcagggtttc agctcatcaa aggccttaca gtctggtgaa agcatttcaa gataaagagt 2580
gttagttgag atctggggag agcgtccagc taaaataaca caacagggcc aagaaccctg 2640
gttgtggttg ggagtgaccg taggctccgg ccaaacgc 2678

15

<210> 9

<211> 2719

<212> DNA

<400> 9

<213> Mus musculus

20

45

gtaagtagcc ccagcccagg gatatgactt cgagttttcc caggctcttt tatcatccaa 25 tgtagccaga cattgtctgt gggaatctga atgactcacg tgttttgaat ttttgaataa 120 agatttatac tgttaaaatg attgtagctt tttagcttgc atgattttac atccgaatag 180 30 ggctgattta ctggaaacaa cgcttgattt actggaaaag gaaatggata gaaaattaaa 240 gtttgttcat gtgtgtcatc tgcaaaacct gtttacacta aaccaactgc tctgatcccg 300 cagcgtactg taggggtgga gtctagctgt atgtggtaaa ttatacgttt gtttctatta 360 35 ggcaaaagtt ggaaactttt ggatgtatca tgatgtagca tgaggtattt agtgcagctg 420 aggtaactgg aagtgaatat caggaatgaa ctgaggtagt tgcctgctct ctgatgttgg 40 ctgagtggac gcattgcttc tgggtttccg gggctctaag agctggtgtc ctatgctgga 540 aatgtgtate ttgtgaetgt gttggtgeee ttacaagtea gaeetatgee attggteatt 600 tgcagcatag catagctttt ctactttctg caaagaaagg aggaagtgtc tcatccaggg 660

gagatetgat ttgcatttet etgeeteaeg tgteeeteag eegettaagt atetgtggaa ccagccttgc caccccacat tgtaactcag ggctcggtag cttcatcagg gaatggagtt 780 5 ttctcgataa gattttcctc ctgttttgtg attcatgact aaatatggtt tgcatttgag 840 actcataage tgggaagggt actgteettt ecteeettee ecceteece caacaattea 900 10 aaaagcagag gctggagccc agtgtgtttt acctaattag gaaatgctcc ccgcttcaaa 1020 ccgagctgct cattcaggtt agataagagt tgcaaaccac agcggctgcg tcctctggaa 1080 15 acacacagac ttcttctcca gtgacaagcc tcctttcaga gcttaataag acaattttt 1140 cctggatatt tttgatgaaa tagaaataca tctttacgga atttgacagt atttttcct 1200 gcattttttt aaaaaccagg gtagcttatt tttctgaata tactaaggca caaccttaag 1260 20 ccatcttgcc caacaaaaag tttatgtggg ttatccttcc ccattttcag agggtatcct 1320 aattccaagt ggcttatccc atttgcagcc ctggtgctaa gtatggaaaa caggcttagt 1380 25 ggacacacag actetetget ggteetttgg tggtttetge etetgeeagt cacetggett 1440 ctgtgcctcc ttgtggtttg aaactttctt ctgagtcctt atcatccact ggaaaggaag 1500 ctaagtataa ttcagaggca tagtggaaag aggaaagagc aaactgctga agaaagggat 1560 30 tttcccattc ttgcaagggg aacacattga agatttcact ctgatcttgg ggacagggtt 1620 gaaagaaaac caagatcgca aacagaatct ttgggtaggg ataatagtta cttgatgata 1680 35 tccacgcgca atgcttgtcc aacactctgg atgtcctttg aagctctcaa aaatccaagc 1740 ttaaatgtca attccttaaa ttgttgttaa aaacaaccct aaggggtata tactcagtta 1800 atcaagetta gaagaagata eeagagetea gggaagaaaa aaagtetaca aaagetgatg 1860 40 cttgccactt caaaagaatc tagtaacatt tggacagaat aagtaagctt tgggtagagg 1920 aacaactcac attttattaa ggtcatatct gtctctttct gtaacttatc agtcttaaac 1980 45 aagaatagct ctcagcaacc tgttgggttt tcagcttaac agtgacttta ataaatgaag 2040

	aaatgttata	actcgtaaaa	tttcaaacac	catatttgga	aatttctatc	caagtttcca	2100
5	tattagacca	gctccttaac	ttgtgatcct	cctgcctcag	cctccaagtg	ctaggatata	2160
	ggtgtacatc	atcacaccca	gccttgattc	atatttaata	cctcaccggc	tcacaagtct	2220
	ttagagccaa	aagttttctc	ttttaaacat	ttaatatgag	taaacatttt	aacattttca	2280
10	aattctcaca	tgctgcccat	tccttgaaaa	tctacctttg	aragagaga	ggggggact	2340
	atatatatat	atgtccctat	agaactctgc	tctctacact	gcatctctca	tctgtgctct	2400
	atgatctatt	cacacactaa	tgctctgacc	agcttgagag	tgttataaga	gcctgtgaca	2460
15	ctcccgctct	ttgtgctgag	gacttgtggt	gttaacctgg	aagtcagggt	ttcggatcat	2520
	caaaggcttt	acagcctagt	gaaagcattt	caagataaag	ggtgttagtt	gagaactgtg	2580
20	gagagcctcc	agctaaaata	acacaacagg	accaagaacc	ctgtctgtgg	gtgggagtga	2640
	ctaggctcta	gccaaatgct	ctgcgctaca	gtagcttctc	gctcgctgtc	tctgcagaac	2700
	cctgagacgc	tgctccagc					2719

<210> 10

<211> 2255

<212> DNA

<213> Gallus gallus

30

<400> 10

gtaagtggca ctgaaccaat agtgggattt atagttttct ggatgacttt aattaagtaa 60

tgtcacatgg aagctattca ggaggatgta ctgctatgct gcagtttgct taggcattac 120

ttactagaac tgaattggta aaatactttc aatgtctaca ctgagttgta tttgttttaa 180

40 agcacttttg aatgggaaat acgtctgatg attttgccga ttccaccaac actccaacgg 240

taatataaag acacagactg tttaatggca cagctggaat ttaagagaac ctgtgtgccc 300

ctgtggagtt agctttggac agaacagagt tcctgaatgg gtgaatttgc acactgtgta 360

45

gtggtttctc agcagctttg cttcagtgct ctcaaaatca gcttaaattg acgtaagtgt tttggagtgt gactgcaaga agagctggaa gatgcaaaat agcagtatct aatcagatgc 5 aatgaggatg catgtgtatt cattgctgtc tcgatagata tgaaagctgt ggtctgcaaa acgcccaata ttttattaaa gatcacatta tacacagagt tccttgtgag gctggagttg 600 ttctcctgat agcatgctgt agaggctggg gaagtgattg gttgtctttc agtgtaaagc 660 10 aggtagaagt aagaggctaa atactgtatt aattgctggg gtgaatatgt cctttattct gcagtgtgag tgacttttgc tgctggagga tgttactact gcatgccatg gcagtccttg 780 15 agctgtaact cactccttgg aagagagtgt cctgcctgaa tgatttagct ttgattttta 840 gctttttgtg ctctattact aaatatggtt ttcattagag tcctccaagc tagaaatgca gccttttcca gctccctcct ctcccctccc ccaagtgatt tttggcattg cattctctgc 20 attggtttga gcaaaccccc tgacctcgaa ctctgttcca aaaacagacg gttggaaagc 1020 atatttccta attaggaaat ggtttctcta aaccactctg ttcattcatg ttagataaca 1080 25 attgtactcc atagactaaa tgcttaaata taaagagcct gttttcccaa aagtttaaga 1140 aagtgcgaaa aattgcaacc tactttcctt ttctggtaat aatgacttaa tatctggagt 1200 acatcaacgt gggatttccc tctccatgcc ttctcctggc agctactgta tccatcgaga 1260 30 actgcagcct gagaagcagt ccacagctgc gtgctcgtgg ctgtgaaggg tctgcagtga 1320 gaggcgtttg ggggaggctg tccctcctag gtccatctat ggtggaggct gaagcgttgc 1380 35 ctcatgctcc catgctcaat cagccatggc tctcactgac gcgcactgcc gcttcgacgt 1440 gcacgccagc aggcccatgg cagcaggttt tgatcgttcg cgaggagcca gctgggctgc 1500 tggatgacag cctgtctcgc tttggctgtt aacacattgc aatttgttga cctctgcatg 1560 40 gaagtccagg ctcccagcta gtcgagtgat tccctaacac actataaatt gtgggcaaat 1620 agttctcctc gagtgctggt attcggggct tgtttccgta attgacttta atacaaaccc 1680 45 tttaaagcat ttttattacc cttgttatct tcctgttgcc tgaggagaaa aacaatttct 1740

.

.

o de

\*

gttttagtga agcagggagc cagcataaat tactttgtca ttctacaaat gcagcttatt 1800 agctggtttg aaatgatgat ggagcacaca ctatggacag tttcaaaaca catgctgtcc 1860 ttgattgcat tttaaagtca ggatatcatc tttctacgtg caccagtctt gtcaggatga 1920 tagaggcagg ggacatcata ctgaatctga tgcaaagaga cctttgtttt tgcagctgtc 1980 agtccagcag tcttctttat ctcccaccta cgcctcagtg gtggatttcc gtggccgaat 2040 10 ttagataaac attcgctgtc tcaaagctgt aatgatctgt ctttccatgc agcaggactg 2100 gaatagttcc atggagtact ttgaattatg tctggtgcat acagccttcc tgcctatcag 2160 15 ttccttttat accgcattct ctgtcttaca gggtggttct ggtacctcac tttgttgttt 2220 ttttttcaat tattcttttc ttgctgtttc catag 2255 20 <210> 11 <211> 10 <212> DNA <213> Artificial Sequence 25 <220> <221> primer\_bind <222> (1)..(10) <223> Synthetic oligonucleotide used for site directed mutagenesis 30 <400> 11 aattgtttaa 10 35 <210> 12 <211> 10 <212> DNA <213> Artificial Sequence 40 <220> <221> primer\_bind <222> (1)..(10) <223> Synthetic oligonucleotide used for site directed mutagenesis

```
<400> 12
     ccctatatca
                                                                        10
 5
     <210> 13
     <211> 10
     <212> DNA
     <213> Artificial Sequence
10
    <220>
    <221> primer_bind
    <222> (1)..(10)
    <223> Synthetic oligonucleotide used for site directed mutagenesis
15
     <400> 13
    aataattaaa
                                                                        10
20
     <210> 14
    <211> 20
    <212> DNA
25
    <213> Artificial Sequence
    <220>
    <221> misc_binding
    <222> (1)..(20)
30
    <223> Synthetic oligonucleotide used for Electromobility Shift Assays
    <400> 14
    ttgctccttg tttgggaagc
                                                                        20
```

- 20 -

```
<210> 15
     <211> 20
     <212> DNA
     <213> Artificial Sequence
 5
     <220>
     <221> misc_binding
     <222> (1)..(20)
    <223> Synthetic oligonucleotide used for Electromobility Shift Assays
10
     <400> 15
    gaggtcccta tatggttgtg
                                                                        20
15
     <210> 16
     <211> 20
     <212> DNA
20
    <213> Artificial Sequence
    <220>
    <221> misc_binding
    <222> (1)..(20)
25
    <223> Synthetic oligonucleotide used for Electromobility Shift Assays
    <400> 16
    ttttacctaa ttaggaaatg
                                                                        20
30
    <210> 17
    <211> 30
35
    <212> DNA
    <213> Artificial Sequence
    <220>
    <221> primer_bind
40
    <222> (1)..(30)
    <223> Synthetic oligonucleotide complementary to E. coli Lac Z, used
          for PCR amplification
```

```
30
 <400> 17
  gcatcgagct gggtaataag cgttggcaat
  <210> 18
5
   <211> 30
   <212> DNA
    <213> Artificial Sequence
10 <220>
     <223> Synthetic oligonucleotide complementary to E. coli Lac Z, used
    <221> primer_bind
    <222> (1)..(30)
           for PCR amplification
 15
      <400> 18
      gacaccagac caactggtaa tggtagcgac
  20
```